IT Applications Unit 3

Ch 1 Problem Solving

Characteristics of data and information, p 7- 11

1. For data to become meaningful what means to happen?

Data needs to be processed, manipulated and organised to be made meaningful.

1. Distinguish between primary and secondary sources of data.

A primary source of data is first hand sources, this may be from surveys, interviews, letters, direct observations and electronic mail. Secondary sources of data are gathered through published or available work of others, this may be in the form of a book, newspaper, magazine or websites.

Data integrity or valuable data

For data to be of value it has a number of characteristics.

Elaborate under each of the following headings, using examples

1. Suitability

Suitability refers to the format of the data being entered into a computer. The format of the data should be established at the beginning and be consistent throughout.

1. Reliability

Reliability is how reliable the source is, information can vary from website to website for example.

* 1. How can the reliability of data be checked?

Data can be checked through comparing information form a number of sources. If information is wrong, incorrect decisions can be made.

1. Accuracy

Accuracy is about the data being entered, being accurate. Errors may arise through typographical errors, misreading or misunderstandings.

1. Timeliness

Data can be gathered too early or too late to be useful, information needs to be current.

1. Freedom from bias

Bias can make an information product unreliable. This is related to data integrity.

* 1. What influences can result in the introduction of bias into your data?

Bias can be introduced through vested interest, timing, inappropriate sample size.

Characteristics of Information

Effective decision-making is predicated on information processing certain qualities. Elaborate under each of the following qualities of information.

1. Relevant information

Information needs to be relevant so it is not misleading.

1. Complete information

This is related to the relevance of information, if a report is not complete the user has to a find additional information.

1. Timely information

Information must be timely to serve its purpose.

1. Accurate information

Incorrect information will lead to wrong decisions being made and problems remaining unsolved.

1. Unbiased information

Bias will distort the decision-making process and inhibit the effectiveness of any solution implemented by the user.

Information Processing Steps

There are nine information processing steps. Elaborate under each of the following:

1. Acquisition

Collecting the data, this includes observing, surveying and interviewing.

1. Input

Input is entering the information to the system, keyboard, mouse and scanner.

1. Validation

Validation is assessing the data to ensure it is complete and correct. This can be manual, such as proof reading and reasonableness checks or electronic, such as range checks, spell checking and input masks.

1. Manipulation

Transforming the data. Examples of manipulation include searching, sorting and creating charts.

1. Storage

Storage is saving information for later use, this may be on USBs or hard disks.

1. Retrieval

Retrieving the data or information, this may be for further processing or manipulating.

1. Output

Output is the presentation, for example as audio or visual, or on a monitor or a printer.

1. Communication, (Videoconferencing)

This is the distribution of the information to the intended users. Communication devices include email, videoconference or on a website.

1. Disposal or archive

Archiving is long term storage, this is for information that is no longer needed on a day to day basis, but may be required in the future. Disposal is for information that is no longer needed or relevant, this may be by deleting files from disks.

Reasons for using Information

1. What are the four purposes of information?

Educate, entertain, persuade and educate.

Characteristics of audiences

Information should meet the needs of its users.

1. List the factors that must be considered in presenting information?

Gender, special needs, culture, age, education level and location.

Information characteristics in organisations, p 14

1. What is meant by “information flow”?

Information flow is the passing on of information and data.

1. List, with examples the four hierarchy levels within an organisation.

Senior management: CEO, president, boss

Middle Management: manager, director

Operational Management: supervisor, coordinator, team leader

Operational workers: receptionist, shop assistant, factory workers.

Structure of Information

Information can be categorised by its structure. Elaborate under each of the following categories:

1. Detailed Reports

Detailed reports include all the records, one line of the detail report is assigned to each record.

1. Summary Reports

Summary reports are briefer than detail reports, they include totals and averages rather than individual items. They are used by middle and senior management.

1. Aggregate Reports

Aggregate reports are similar to detailed, but relate to only one particular factor or subject.

1. Sample Reports

They are used by senior management and provide an idea of the overall situation.

1. Exception Reports

Exception reports identify data that shows a variation in the set or target result. They help managers identify situations that require action.

Decision-Making in Organisations:

Under each of the following four hierarchy levels within the organisation indicate the type and nature of decision made:

1. Senior Management decision-making

Strategic decisions are made by senior management, they involve complicated problems that relate to the long term goals of an organisation.

1. Middle management decision-making

Tactical decisions are made by middle management, they solve problems that affect the running of an organisation.

1. Operational management decision-making

Operational management workers make operational decisions, they include directing customer complaints, ordering stock and replacing sick workers.

1. Operational workers’ decision-making.

Day to day decisions are made by operational workers, they are normally the first point of contact within an organisation. They decide who is next in the queue, directing customer complaints and enquiries.

1. Distinguish between a strategic decision and a tactical decision?

Strategic decisions are huge long term decisions that are made over years, compared to tactical decisions that are generally made within weeks or months.